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7/30/03

CLAIMS

connectivity count = quantity of vertices
in graph

I claim:

- 5 1. A method for maximizing group membership comprising:
 - (a) calculating a connectivity count of each vertex in a graph;
 - (b) determining a maximum connectivity count for each vertex from said calculation;
and
 - (c) removing a vertex from said graph with said connectivity count less than said
10 maximum connectivity count.
2. The method of claim 1, further comprising updating said connectivity count for all
remaining vertices in said graph following removal of a single vertex from said graph.
- 15 3. The method of claim 1, further comprising individually removing all vertices with said
connectivity count less than said maximum connectivity count in said graph.
4. The method of claim 1, further comprising removing all vertices in said graph until said
connectivity count of a least connected vertex is equal to said maximum connectivity
20 count.
5. The method of claim 1, wherein said vertex is selected from a group consisting of: a
computing node, components on a circuit board, division of points in a pattern,
partitions of items, and combinations thereof.

112 - written
description

- exclusion
enablement*
6. The method of claim 1, wherein said graph is selected from a group consisting of: a cluster of nodes, circuit board components, pattern recognition, biological data, archeological data, project selection, classification, fault tolerance, coding, computer vision, economics, information retrieval, signal transmission, alignment of DNA with protein sequences, and combinations thereof.
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7. A system to determine a maximum group membership comprising:
a counter for calculating a connectivity count for each vertex in a graph;
means for placement of each vertex in descending order of connectivity; and
10 means for removal of a vertex from said graph with said connectivity count less than a maximum connectivity count.
8. The system of claim 7, further comprising means for an update of connectivity for each of said vertices subsequent to said removal of a vertex from said graph.
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9. The system of claim 7, wherein said removal of a vertex from said graph with said connectivity count less than said maximum connectivity count in said graph is continuous until said connectivity count of a least connected vertex is equal to said maximum connectivity count.
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10. The system of claim 7, wherein said vertex is selected from a group consisting of: a computing node, components on a circuit board, division of points in a pattern, partitions of items, and combinations thereof.
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11. The system of claim 7, wherein said graph is selected from a group consisting of: a cluster of nodes, circuit board components, pattern recognition, biological data,

archeological data, project selection, classification, fault tolerance, coding, computer vision, economics, information retrieval, signal transmission, alignment of DNA with protein sequences, and combinations thereof.

- 5 12. An article comprising:
 a computer-readable signal-bearing medium;
 means in the medium for calculating connectivity for each vertex in a graph;
 means in the medium for selecting a least connected vertex for removal from a clique in
 said graph; and
10 means in the medium for removing said least connected vertex from said graph.
13. The article of claim 12, wherein said means is selected from a group consisting of: a
 recordable data storage medium, and a modulated carrier signal.
- 15 14. The article of claim 12, wherein said means for selecting a least connected vertex for
 removal from a clique in said graph includes placing vertexes of a graph in descending
 order.
15. The article of claim 12, further comprising means in the medium for updating
20 connectivity for each remaining vertex in said graph subsequent to removal of said least
 connected vertex.
16. The article of claim 12, wherein said vertex is selected from a group consisting of: a
 computing node, components on a circuit board, division of points in a pattern,
25 partitions of items, and combinations thereof.

17. The system of claim 12, wherein said graph is selected from a group consisting of: a cluster of nodes, circuit board components, pattern recognition, biological data, archeological data, project selection, classification, fault tolerance, coding, computer vision, economics, information retrieval, signal transmission, alignment of DNA with protein sequences, and combinations thereof.

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